

Letters to the Editor

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THE RELATION BETWEEN BODY MASS INDEX AND SUBSTANCE USE: A TRUE CAN OF WORMS

Dear Editor:

In a recent article by Sansone and Sansone,¹ the authors nicely demonstrated that the pattern emerging from research on the relationship between obesity and substance misuse is most remarkable for its inconsistency. That is, both positive, negative, and no associations between obesity and substance use have been reported in the literature. The authors note that some studies found an inverse relationship between body mass index (BMI) and alcohol use, which may be the result of a “brain reward site competition” among different substances, such as food and drugs. Indeed, such an interpretation is also in line with a possible “addiction transfer” in patients with obesity after bariatric surgery. Specifically, emerging evidence suggests that post-bariatric surgery patients are at risk for substance use disorders (SUDs), a substantial proportion of which are new-onset SUDs.² In turn, there are also reports of weight gain and changes in food preferences in patients in SUD recovery.³ In this commentary, I would like to highlight that there are numerous factors that need to be considered when examining the relationship between obesity and substance misuse and that these factors likely account for inconsistent findings.

First, it is crucial to differentiate between the specific types of substances used. For example, it is mentioned by the

authors¹ that energy consumed as alcohol is additive to that from other dietary sources and, thus, alcohol use contributes to weight gain, at least in nondependent drinkers and nonobese individuals (see also Yeomans⁴). Drinking alcohol may also trigger food intake and this alcohol-related eating has been associated with being overweight or obese.⁵ Even when focusing solely on alcohol use, drawing straightforward conclusions about the relationship with BMI is further complicated by the fact that there are different types of alcoholic beverages. Indeed, it has been found that wine intake may be more likely to protect against weight gain, whereas consumption of spirits may foster weight gain.⁶ Other substances have no nutritional value, but influence appetite and metabolism. For example, smokers typically have lower BMIs than nonsmokers and are inclined to gain weight after smoking cessation.⁷ Similar findings can be observed in cocaine-dependent users.⁸ To conclude, although both food and substances of abuse act on brain reward sites, the relationship between BMI and substance use likely differs by substance because of different (peripheral) physiological mechanisms.

Second, instead of focusing on BMI, it may be more promising to examine the specific kind of eating behavior in relation to substance use. Researchers often ignore the fact that obesity is a heterogeneous condition. While the route to obesity is a rather modest average daily excess of energy intake over energy expenditure for most

individuals, a subset of individuals with obesity represents a rather impulsive, reward-sensitive phenotype with binge eating behavior that can be differentiated in terms of eating styles and cravings for foods.⁹ Thus, aspects of eating behavior, such as binge eating or—as some researchers call it—addiction-like eating,¹⁰ may be important factors to consider when examining the relationship between substance use and obesity. For example, a recent study showed that participants classified as “food addicted” were more likely to be non-smokers or former smokers.¹¹ In another study, individuals with obesity and “food addiction” reported lower alcohol use than those without a food addiction classification. In addition, food addiction symptomatology moderated the relationship between alcohol use and self-reported impulsivity,¹² which further demonstrates the influential role of psychological aspects and eating style on alcohol use in individuals with obesity, independent of BMI.

Finally—and on a related note—research on the relationship between eating disorders and substance use suggests that it may be necessary to move beyond coprevalence data. For example, it has been found that individuals with bulimia consumed more alcohol during nonbinge eating episodes and less alcohol during binge eating episodes.¹³ Thus, substance use patterns may depend on eating topography. These are just some issues to consider when looking at the relationship between obesity and substance use, and there are probably many more. Hopefully, future research will yield further insights on the relationship

between BMI and substance use based on comprehensive models incorporating both physiological and psychological mechanisms and fine-grained analyses of the interplay between substance use and eating patterns.

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